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09/976,025	10/15/2001	Takashi Oki	SPO-0200	1564

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EXAMINER	
FAULK, DEVONA E	

ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/976,025	OKI, TAKASHI	
	Examiner	Art Unit	
	Devona E. Faulk	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 3/30/2004.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-8 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-8 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Paper No. 6, filed 3/30/04, with respect to the rejection(s)of claim(s) 1-6 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Ishikawa (U.S. Patent 4,980,915) and in further view of Dalgleish (GB 2 153 187).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1-4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Short et al. (U.S. patent 4,739,514) in view of Ishikawa (U.S. patent 4,980,915).

Regarding **claim 1**, Short discloses an automatic dynamic circuit comprising a high pass filters (51L, 51R, Figure 7) which reads on " left-channel and right-channel high pass filters to which the left-channel and the right-channel input sound signals are fed respectively, the high-pass filters having high-pass characteristics in which only frequency components higher than a predetermined frequency are allowed to pass through for outputting"; a low pass filter (46) and its corresponding amplifier (47) which read on "bass booster for amplifying only frequency components lower than the predetermined frequency of signals resulted from adding the left-

channel and the right-channel input sound signals together, and attenuating other frequency components for outputting"(column 4, lines 43-67). Short further teaches of adders (14L, 14R) (Figure 3, column 3, line 23-25) between the high pass filter 51L and it's corresponding power amplifier 52L. Although, Short does not teach of a switch placed between the adder and the output of the bass booster, the concept of a switching means placed between an adder at the time of filing as taught by Ishikawa. Ishikawa discloses a center model control circuit comprising a switch (34) that determines how the center channel is to be applied or not applied to the left and right speaker (Figures 1, column 3, lines 45-column 4, line 10) (See Abstract). Modifying Short's apparatus to include Ishikawa's concept of center channel control reads on "a left-channel adder capable of adding two left-channel signals together and outputting resultant signals, the two left-channel signals being output signals from the left-channel high pass filter and output signals from the bass booster", and "a right channel adder capable of adding two right-channel signals together and outputting resultant signals, the two right-channel signals being output signals from the right-channel high-pass filter and output signals from the bass booster". Short and Ishikawa each use stereo signals and headphones are two-channel. So, although neither teach specifically of the capability of usage with headphones, it is obvious to provide the capability of use with headphones. In incorporating headphone usage it would have been obvious to have a "switching means". Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Short and Ishikawa's apparatus as stated above for the benefit of having a stereo system that would permit switching between headphones and speakers.

Claim 2 claims the deep bass sound booster device of claim 1 further comprising a connector to which the headphones are connected wherein when the headphones are connected to the connector, the switching means forms the second signal pass for the reproduction with headphones by way of contacts provided in the connector, and when the headphones are disconnected from the connector, the switching means forms the first signal pass for the reproduction with loudspeaker by way of the contacts provided in the connector. As stated above apropos of claim 1 the combination of Short and Ishikawa meets all elements of that claim. Therefore, the combination meets all elements of claim 2 with the exception of the claimed matter. All elements of claim 2 are comprehended by claim 1.

Claim 3 claims the deep bass sound booster device of claim 1, further comprising level adjusting means for adjusting a level of signals fed to the bass booster wherein the left-channel and the right-channel high-pass filters have the high-pass characteristics and flat characteristics of which one can be selected and when the headphones are used to reproduce sound and when the level of signals fed to the bass booster is not muted, the high-pass characteristics is selected. As stated above apropos of claim 1 the combination of Short and Ishikawa meets all elements of that claim. Therefore, the combination meets all elements of claim 2 with the exception of the claimed matter. All elements of claim 2 are comprehended by claim 1. Ishikawa teaches of a center model control circuit that provides for the option of adding a low frequency components the center channel, adding a full range of the center channel and not adding the center input channel to the left and right stereo inputs (See abstract, Figures 1 and 3). All elements of claim 3 are comprehended by claim 1. Therefore, claim 3 is rejected for reasons given above in claim 1.

Claim 4 claims the deep bass booster of claim 3 wherein, when the loudspeakers are used to reproduce sound, the level adjusting means is arranged in a way that the level of the signals fed to bass booster is prevented from going below a point at which an output signal level of the bass booster becomes lower than a level of the input sound signals. As stated above apropos of claim 3, the combination of Short and Ishikawa meets all elements of that claim. Therefore, the combination meets all elements of claim 4 with the exception of the claim matter. Short further teaches of volume control and not permitting the sound to go beyond a point (column 1, lines 31-46; column 4, lines 25-44). All elements of claim 4 are comprehended by claim 3. Therefore, claim 4 is rejected for reasons given above in claim 3.

4. **Claims 5 and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Short et al. (U.S. patent 4,739,514) in view of Ishikawa (U.S. patent 4,980,915) in further view of Dalgleish (GB 2 153 187 A).

Regarding **claim 5**, Short discloses an automatic dynamic circuit comprising a high pass filters (51L, 51R, Figure 7) which reads on " left-channel and right-channel high pass filters to which the left-channel and the right-channel input sound signals are fed respectively, the high-pass filters having high-pass characteristics in which only frequency components higher than a predetermined frequency are allowed to pass through for outputting"; a low pass filter (46) and its corresponding amplifier (47) which read on "bass booster for amplifying only frequency components lower than the predetermined frequency of signals resulted from adding the left-channel and the right-channel input sound signals together, and attenuating other frequency components for outputting"(column 4, lines 43-67). Short further teaches of adders (14L, 14R) (Figure 3, column 3, line 23-25) between the high pass filter 51L and it's corresponding power

amplifier 52L. Although, Short does not teach of a switch placed between the adder and the output of the bass booster, the concept of a switching means placed between an adder at the time of filing as taught by Ishikawa. Ishikawa discloses a center model control circuit comprising a switch (34) that determines how the center channel is to be applied or not applied to the left and right speaker (Figures 1, column 3, lines 45-column 4, line 10). Although Ishikawa teaches on the above named elements he fails to teach of a separate bass booster for each channel. However the concept of a left and right channel, each having a bass booster was well known in the art at the time of filing as taught by Dalgleish. Dalgleish discloses a method of processing stereo signals wherein the left and right channel each have a low pass filter (10) that filters the low-frequency signals from each channel and an amplifier (12) that amplifies the low frequency signals (See Abstract). Modifying Short and Ishikawa's apparatus by using Dalgleish's concept of having a bass booster on each channel reads on "a left-channel adder capable of adding two left-channel signals together and outputting resultant signals, the two left-channel signals being output signals from the left-channel high pass filter and output signals from the left-channel bass booster", and "a right channel adder capable of adding two right-channel signals together and outputting resultant signals, the two right-channel signals being output signals from the right-channel high-pass filter and output signals from the right-channel bass booster" and the claimed "left-channel and right-channel bass booster". Short and Ishikawa each use stereo signals and headphones are two-channel. So, although neither teach specifically of the capability of usage with headphones, it is obvious to provide the capability of use with headphones. In incorporating headphone usage it would have been obvious to have a "switching means". Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Short and

Ishikawa's apparatus by using Dalgleish's concept of having a bass booster for each channel as stated above for the benefit of having a stereo system that would better eliminate or reduce low-frequency noise.

Claim 6 claims the deep bass booster device of claim 5 further comprising a connector to which the headphones are connected wherein, the headphones are connected to the connector, the switching means forms the second signal pass for the reproduction with headphones by way of contacts provided in the connector, and when the headphones are disconnected from the connector, the switching means forms the first signal pass for the reproduction with loudspeakers by way of the contacts provided in the connector. As stated above apropos of claim 5 the combination of Short, Ishikawa and Dalgleish meets all elements of that claim. Therefore, the combination meets all elements of claim 6 with the exception of the claimed matter. It is obvious that some type of connecting device would be present. All elements of claim 6 are comprehended by claim 5.

Claim 7 claims the deep bass booster device of claim 5 further comprising level adjusting means for adjusting a level of signals fed to the left-channel and the right-channel bass boosters, wherein the left-channel and the right-channel high-pass filters have the high-pass characteristics and flat characteristics of which one can be selected and when the headphones are sued to reproduce sound and when the level of signals fed to the left-channel and the right-channel bass boosters is not muted, the flat characteristics is selected, and when the headphones are used to reproduce sound and when the level of signals fed to the left-channel and the right-channel bass boosters is not muted, the high pass frequency characteristics is selected. As stated above apropos of claim 5 the combination of Short, Ishikawa and Dalgleish meets all elements of that

claim. Therefore, the combination meets all elements of claim 7 with the exception of the claimed matter. Ishikawa teaches of a center model control circuit that provides for the option of adding a low frequency components the center channel, adding a full range of the center channel and not adding the center input channel to the left and right stereo inputs (See abstract, Figures 1 and 3). All elements of claim 7 are comprehended by claim 5. Therefore, claim 7 is rejected for reasons given above in claim 5.

Claim 8 claims the deep bass booster of claim 7 wherein, when the loudspeakers are sued to reproduce sound, the level adjusting means is arranged in a way that the level of the signals fed to the left-channel and the right-channel bass boosters is prevented from going below a point at which an output signal level of the left-channel and the right-channel bass boosters becomes lower than a level of the input sound signals. As stated above apropos of claim 8, the combination of Short, Ishikawa and Dalgleish meets all elements of that claim. Therefore, the combination meets all elements of claim 8 with the exception of the claim matter. Short further teaches of volume control and not permitting the sound to go beyond a point (column 1, lines 31-46; column 4, lines 25-44). All elements of claim 7 are comprehended by claim 5. Therefore, claim 7 is rejected for reasons given above in claim 7.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 703-305-4359. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PRIMARY EXAMINER